

Remarks

Claim Rejections – 35 U.S.C. 101

Claims 4, 7 and 8 stand rejected under 35 U.S.C. 101 for failing to fall within the four statutory categories.

Claims 7 and 8 have been cancelled. It is therefore submitted that the objection under 35 U.S.C. 101 raised against claims 7 and 8 is now moot.

As for claim 4, the Applicant respectfully disagrees with the assertion that it fails to fall within the four statutory categories. Claim 4 is directed to a method of transmitting packet traffic in a shared protection optical transmission network, and this method may be undertaken in such a network using appropriately arranged apparatus, including the network node of claim 1, for example. Thus, it is clear to a skilled reader that the method is not one that is limited to only being run as a computer program.

Because the method of claim 4 can be implemented using many different arrangements of physical apparatus or hardware throughout an optical communications network, the Applicant does not understand how claim 4 is considered to be restricted to claiming the steps of a computer program only. Without further explanation and/or substantiation of this being provided by the Examiner, the Applicant is of the opinion that method claim 4 relates to a useful process for the communication of traffic in an optical transmission network and, consequently, falls within the statutory category of processes.

Claim Rejections – 35 U.S.C. 103

Claims 1-6 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Baroni et al. (US 6,662,308) in view of Type and Characteristics of SDH Network Protection Architectures ITU-T, G.841 (10/98).

Independent claims 1, 3 and 4 have been amended to explicitly recite the well-known definition of link aggregation which is provided in the specification at page 5, lines 4-14. Specifically, the independent claims now recite that link aggregation comprises grouping physical link segments of the same media type and speed, and treating them as if they were part of a single, logical link segment, and if a link in a trunk fails, the flows mapped to that link are dynamically reassigned to the remaining links of the aggregated link.

Since the definition of link aggregation that has been added to independent claims 1, 3 and 4 is well known, and is provided in the specification at page 5, lines 4-14, it is submitted no new matter has been added.

The Examiner concedes that Baroni differs from claims 1, 3 and 4 in that he does not disclose, in failure free operation, both the working transmission path and the shared protection path carrying link aggregated traffic simultaneously without duplication of that traffic on the two routes.

However, the Applicants further assert that Baroni does not disclose a network node comprising a link aggregation router as now recited in the independent claims.

Baroni only presents the use of routers to send data over a network to routers located in other parts of the network. When explaining unshared protection architectures, Baroni details the more simple process of switching traffic between paths. This can only be considered to be relevant to the independent claims if the switching routers of Baroni can be seen as link aggregation routers and if both primary and secondary paths carry link aggregated traffic.

There is no mention by Baroni et al that the routers in the architecture of Figures 1-3 are anything more than traffic switchers. The shared protection path in Baroni does involve the reallocation of traffic in the event of a failure, but this reallocation does not meet the definition of link aggregation now provided in the independent claim and which includes reallocation to the remaining links of the aggregated link. In Baroni, the reallocation is not to the remaining links, but is to an alternative line, the secondary line.

The Examiner looks to "Type and Characteristics of SDH Network Protection Architectures ITU-T, G.841 (10/98)" (hereinafter referred to as ITU-T) for the disclosure of simultaneous transmission of aggregated traffic on both the transmission path and shared protection path during failure-free operation. It is respectfully submitted that the disclosure of having protection channels carry extra traffic when not being used for protection of normal traffic does not teach the features of claims 1, 3 and 4 which are missing from Baroni.

ITU-T does not disclose link aggregated traffic being carried on both the working path and the shared protection path during failure-free operation. Starting from Baroni, and considering savings in protection capacity that shared protection architectures can provide (see col.2, lines 46-56), the skilled person is taught that unused protection channels can be

shared for failure affecting other transmission paths, thus improving network capacity. ITU-T only states that extra traffic can be carried on a protection channel, and does not discuss exactly what is carried on the shared protection path during failure-free operation.

In view of Baroni's disclosure, the teaching of ITU-T can only be said to lead a reader to understanding that an un-used protection channel can provide additional capacity for additional traffic. This additional traffic cannot be taken as link aggregated traffic as defined above. Such link aggregated traffic comprises flows which are mapped to a group of physical link segments of the same media type and speed, treated as if they were part of a single, logical link segment, and dynamically reassigned between the links in the event of failure.

Given the definition of link aggregation now provided in the independent claims, and Baroni's disclosure being limited to traffic switching between primary and secondary paths, it should be apparent that the subject-matter of claims 1, 3 and 4 goes beyond any combination of Baroni and ITU-T.

As explained in previous responses, and as seen in Baroni, optical protection schemes would normally be handled at the link level and thus operate independently of any link aggregation router. Hence, there is nothing in either Baroni or ITU-T which leads an addressee towards the unconventional step of incorporating a link aggregation router into an optical shared protection scheme as set out in the present claim 1. Nor is there any disclosure of transmitting link aggregated traffic of an unused protection channel.

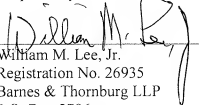
The claimed invention makes more efficient use of available bandwidth. The advantages of link aggregation and of shared protection paths can be achieved simultaneously and more efficiently by using the same router for both schemes. There is no suggestion in Baroni or ITU-T of this concept, nor any suggestion of using a router to separate traffic between a shared protection path and a working path.

Having addressed the rejections raised against all independent claims, it is submitted that the remaining rejections raised against the dependent claims are now moot. Although no discussion of any remaining rejections raised against the dependent claims is given, it should not be taken that the rejections raised are accepted.

It is submitted that this application is now in condition for allowance. Such action is respectfully solicited

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Respectfully submitted,

A handwritten signature in black ink, appearing to read "William M. Lee, Jr.", written over a horizontal line.

William M. Lee, Jr.
Registration No. 26935
Barnes & Thornburg LLP
P.O. Box 2786
Chicago, Illinois 60690-2786
(312) 214-4800
(312) 759-5646 – Fax